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U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK

ATTORNEY'S DOCKET NUMBER

449122004700

**TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. § 371**

U.S. APPLICATION NO. (If known, see 37 CFR 1.5)

09/806908

INTERNATIONAL APPLICATION NO.

PCT/DE99/03239

INTERNATIONAL FILING DATE

September 30, 1999

PRIORITY DATE CLAIMED

October 7, 1998

TITLE OF INVENTION

COMMUNICATION SYSTEM FOR RADIO-TRAVEL OPERATIONS

APPLICANT(S) FOR DO/EO/US

Dr. Holm HOFESTAEDT et al.

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☐ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.
4. ☒ The US has been elected by the expiration of 19 months from the priority date (PCT Article 31)
 - ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☒ is attached hereto (required only if not communicated by the International Bureau).
 - b. ☒ has been communicated by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
 - ☐ An English language translation of the International Application under PCT Article 19 (35 U.S.C. 371(c)(2)).
 - a. ☐ is attached hereto.
 - b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4).
 - ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)).
 - a. ☐ are attached hereto (required only if not communicated by the International Bureau).
 - b. ☐ have been communicated by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☐ have not been made and will not be made
 - ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
 - ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
 - ☐ An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

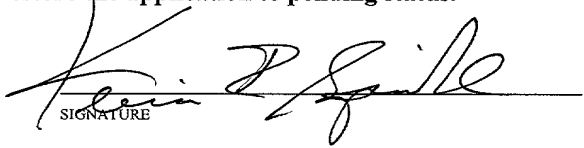
Items 11. to 16. below concern document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☐ A FIRST preliminary amendment.
14. ☐ A SECOND or SUBSEQUENT preliminary amendment.
15. ☐ A substitute specification.
16. ☐ A change of power of attorney and/or address letter.
17. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.
18. ☐ A second copy of the published international application under 35 U.S.C. 154(d)(4).
19. ☐ A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).
20. ☒ Other items or information: 1. IPER 2. International Search Report 3. Application Data Sheet 4. Return receipt postcard.

CERTIFICATE OF HAND DELIVERY

I hereby certify that this correspondence is being hand filed with the United States Patent and Trademark Office in Washington, D.C. on April 6, 2001.

Bridget Christian
Bridget Christian

U.S. APPLICATION NO (if known, see 37 CFR 1.5) 09/806908		INTERNATIONAL APPLICATION NO PCT/DE99/03239		ATTORNEY'S DOCKET NUMBER. 449122004700	
21. <input checked="" type="checkbox"/> The following fees are submitted: BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(5)): Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO\$1,000.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO\$860.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO\$710.00 International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provision of PCT Article 33(1)-(4)\$690.00 International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4)\$100.00				CALCULATIONS PTO USE ONLY	
ENTER APPROPRIATE BASIC FEE AMOUNT =				\$860.00	
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$0	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	\$0	
Total claims	5 - 20 =	0	x \$18.00	\$0	
Independent claims	2 - 3 =	0	x \$80.00	\$0	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ \$270.00	\$0	
TOTAL OF ABOVE CALCULATIONS =				\$860.00	
Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by ½.				\$0	
SUBTOTAL =				\$860.00	
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				+	\$0
TOTAL NATIONAL FEE =				\$860.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property				+	\$0
TOTAL FEES ENCLOSED =				\$860.00	
				Amount to be refunded:	\$0
				charged:	\$860.00
a. <input checked="" type="checkbox"/> A check in the amount of \$860.00 to cover the above fees is enclosed. b. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees that may be required, or credit any overpayment to <u>Deposit Account No. 03-1952.</u>					
NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.					
SEND ALL CORRESPONDENCE TO: Kevin R. Spivak Morrison & Foerster LLP 2000 Pennsylvania Avenue, N.W. Washington, D.C. 20006-1888					
 SIGNATURE					
Kevin R. Spivak Registration No. 43,148					

Description

Communication system for radio travel operations

5 The invention relates to a communications system for radio travel operations as claimed in the preamble of patent claim 1 and can be applied, for example, for railway services.

10 Railway operations are frequently controlled using intermittent automatic train control or continuous train control. In the case of intermittent automatic train control, information is transmitted from and to the passing vehicles at devices fixed along the route, for example. In modern continuous train
15 control, quasi-continuous information transmission is possible from the route to the vehicles, and vice versa. It has already been proposed to transmit the information by radio (known, inter alia, as radio train control). The data which are to be transmitted are made
20 available by interlocking cabins or control centers which also perform all the control functions of the route devices (level crossings, railway switches, railway station devices), the instantaneous location of one or more trains being processed as the most
25 important information.

DE 197 21 246 discloses for this a communications device with which both the data from decentralized control devices and the data of central services can be transmitted to a train with just a
30 single transmission channel. For this purpose there is provision for all this data to be fed to a central gateway computer. The latter then brings about the transmission data to the vehicle. By using a central gateway computer which is assigned to the train it is
35 possible to transmit all the data in multiplex mode

However, radio-supported systems for continuous train controls require high technical, in particular computing expenditure owing to their centralized devices.

5 For this reason, a further operating method has been developed which is referred to as "radio travel operations (FFB in German)" which implements the functions of "route setting" and "route securing" on the vehicle and not in a centralized fashion in the
10 route network as in the past. The command to actuate a route device (railway switch, level crossing, etc.) is made here by radio by the vehicle itself. A link to central devices is made at most with regard to central allocation tasks now (assignment to vehicles,
15 monitoring of schedules, emergency information and the like). A problem with this is limited resource in terms of radio channels from the vehicle to the route and the associated long link setup times (20-25 sec. including setup of the securing layer). A plurality of radio
20 communications has to be carried out simultaneously from the vehicle as a function of the vehicle speed and the density of vehicle elements which the vehicle has to set and secure. The radio standard which is provided for railway applications makes available just one radio
25 channel for data communication per terminal. Even if two mobile radio terminals are used on the vehicle, bottlenecks may occur.

The invention is based on the object of providing a communication system for radio travel
30 operations which uses simple means to make possible reliable data traffic via effective communication paths with just one radio transmission channel between vehicles and, if appropriate, a plurality of route elements,
35 and minimizes expenditure on setting up, updating and maintaining the system.

5 This object is achieved according to the invention by means of the features in the characterizing part of claim 1 in conjunction with the features and the preamble. The subclaims contain expedient embodiments of the invention.

10 A particular advantage of the invention consists in the fact that a single mobile terminal on one vehicle is sufficient to be able to communicate simultaneously with a plurality of route elements by virtue of the fact that the radio links for the data transmission from the vehicles to the route elements, are not established directly as a function application, i.e. wherever there is a high density of route elements, but rather set up via a gateway computer. The price paid for this is that (n+1) radio communications are necessary for communication with n route elements. Without multiplexing, n radio communications are necessary for this. A further application of the gateway functionality in radio travel operations on double-track or multi-track routes consists in generally setting up communication with level crossings via the gateway computer. This is the only way in that it is possible for two or more trains to communicate simultaneously with the level crossing. Without a gateway computer this would have to take place successively, and could lead to operational impediments.

25 The communication characteristic of radio travel operations with rapidly changing, brief communications is completely different from that of radio train control. The latter is characterized by the fact that each train has a permanent link to a control center. The communications pattern is therefore quasi-static. The link-oriented communication of radio train control is ideally suited to this and the comparatively long link setup times are not an important

factor. This does not apply to radio travel operation. With the present invention, a way is provided of permitting individual data transmission between the trains and the fixed control elements on route sections
5 with a high density of route elements by means of partial elements such as are used - in another method of operation - in radio train control.

A further advantage of the invention consists in the fact that immediate stop instructions which,
10 when necessary, are sent by radio to the vehicles from the radio travel operations control center can also be transmitted immediately via the multiplex channel in regions with a high route element density. This applies also to high-priority data which are sent by radio to
15 all receive-end elements of the multiplex channel.

The invention will be explained in more detail below with reference to one exemplary embodiment which is illustrated at least partially in the figure.

Figure 1 shows a variant of a multiplex link
20 from the vehicle to a gateway computer and to the forwarding to route elements

Figure 1 illustrates the mechanism by means of an example of a route section composed of two railway switches W1, W2 and a level crossing LC. After the
25 first link request has been implemented from the vehicle F to one of these three route elements (e.g. to the level crossing LC) via a gateway computer FBS, each further link request from the vehicle F to another route element W1, W2 is multiplexed via the same
30 physical link to the gateway computer FBS

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and forwarded from there to the desired route element W1 or W2 or LC.

5 The link setup to the route elements W1, W2 or LC can be optimized in this way. Thus, without multiplexing, the three communications would have to be carried out successively. With multiplexing it is possible for the communication phases of the individual communications to take place in a largely chronologically overlapping way.

10 Each communication is composed of the three following time elements:

- a) switching communication setup, T(GSM) approximately 10 sec mtm or approximately 5 sec moc, mtc
- 15 b) setup of the securing layer, T(securing): approximately 15 sec
- c) data transmission, T(transmission): approximately 2 sec.

in which:

- 20 mtm: mobile to mobile call (from one mobile to another)
- moc: mobile originated call (from mobile into the ISDN fixed network)
- mtc: mobile terminated call (from the ISDN fixed network to the mobile)

25 The entire communication duration is therefore: without gateway computer and multiplexing:
$$3(T(\text{GSM, mtm}) + T(\text{securing}) + T(\text{transmission})) = \text{approximately 81 sec.}$$

with gateway computer and multiplexing:
30
$$T(\text{GSM to the gateway, moc}) + T(\text{GSM to the LC, mtc}) + T(\text{securing LC}) + T(\text{transmission to the LC}) = \text{approximately 27 sec}$$

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For the radio travel operations application, the multiplexing via gateway computer is completely transparent; i.e. it is not visible which path is being used to forward the link. The telegrams do not differ
5 at the interface to the secure application from telegrams which are forwarded directly (without the detour via the gateway computer) to a route element.

The invention is not restricted to the exemplary embodiments illustrated here. Instead, it is
10 possible to implement further embodiment variants by combining and modifying the means and features, without departing from the scope of the invention.

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--AMENDED SHEET--

Patent claims

1. A communication system for radio travel operations for making radio transmission between
5 vehicles (F) and route elements (W1, W2, LC) of a route network, characterized in that gateway computers (FBS) which mediate the radio link between vehicle (F) and route elements (W1, W2, LC) in the route network at least at locations with a high density of route
10 elements (W1, W2, LC), and a multiplex channel is present for forming a radio link between the respective vehicle (F) and the respective gateway computer (FBS).
2. The communication system for radio travel operations as claimed in claim 1, characterized in that
15 the vehicles (F) and the route elements (W1, W2, LC) are equipped with radio terminals, but the latter are alternatively also equipped with line-bound communications terminals.
3. The communication system for radio travel operations as claimed in claim 1, characterized in that
20 the vehicles (F) are trains and the route elements (W1, W2, LC) are railway switches (W1, W2), track locks, key locks, block or level crossings (LC).
4. The communication system for radio travel operations as claimed in one of the preceding claims,
25 characterized in that, if necessary, communication between a plurality of trains (F) and a route element (W1, W2, LC) is provided.

Description

Communication system for radio travel operations

5 The invention relates to a communications system for radio travel operations as claimed in the preamble of patent claim 1 and can be applied, for example, for railway services.

10 Radio travel operations are a new operating method with which the "route setting" and "route securing" functions are not implemented on the route as in the past but rather on the vehicle. A problem with this is limited resource in terms of radio channels from the vehicle to the route and the associated long
15 link setup times (20-25 sec. including setup of the securing layer). A plurality of radio communications has to be carried out simultaneously from the vehicle as a function of the vehicle speed and the density of vehicle elements which the vehicle has to set and
20 secure. The radio standard which is provided for railway applications makes available just one radio channel for data communications per terminal. Even if two mobile radio terminals are used on the vehicle, bottlenecks may occur.

25 DE 197 21 246 discloses a communication device for radio-supported railway services with which both the data from decentralized control devices and the data of central services can be transmitted to a train with just a single transmission channel. For this
30 purpose there is provision for all this data to be fed to a central gateway computer. The latter then brings about the transmission data to the vehicle. By using a central gateway computer which is assigned to the train it is possible to transmit all the data in multiplex
35 mode without a new transmission

route having to be set up between the vehicle and the central railway services when the train moves forward as a result of the change into a new route region.

Furthermore, in order to avoid long
5 communication paths, DE (GR 98 P 4131 DE) describes an optimized communication system for radio-supported traffic services, which system has one or more decentralized gateway computers in addition to the fixed, centralized services and the fixed decentralized
10 control points in the traffic network. The communication between the mobile elements and the fixed elements is implemented via the gateway computers in that in each case a representative element is set up for the mobile elements which communicate with the
15 gateway computers, in the gateway computer and in the fixed elements, and for the fixed elements which communicate with the gateway computers representative elements are set up directly in the gateway computer or indirectly via at least one information server. The
20 representative information is updated in the gateway computer and in the fixed elements by means of an update method between the representative elements in the gateway computer and the fixed elements or between the gateway computer and information server.

25 This method permits a plurality of logic connections to be multiplexed for a vehicle via a physical radio channel to a gateway which is associated with a fixed network and which can forward the links to any desired end point within the fixed network.

30 The invention is based on the object of providing a communication system for radio travel operations which uses simple means to make possible reliable data traffic via effective communication paths with just one radio transmission channel between
35 vehicles and route elements, which ensures simultaneous communication with a plurality of elements

and minimizes expenditure on setting up, updating and maintaining the system.

5 This object is achieved according to the invention by means of the features in the characterizing part of claim 1 in conjunction with the features and the preamble. The subclaims contain expedient embodiments of the invention.

10 A particular advantage of the invention consists in the fact that a single mobile terminal on one vehicle is sufficient to be able to communicate simultaneously with a plurality of route elements by virtue of the fact that the radio links for the transmission of data from the vehicles to the route elements are not established directly but rather set up
15 via a gateway computer. The price paid for this is that $(n+1)$ radio communications are necessary for communication with n route elements. Without multiplexing, n radio communications are necessary for this. A further application of the gateway
20 functionality in radio travel operations on double-track or multi-track routes consists in generally setting up communication with level crossings via the gateway computer. This is the only way in that it is possible for two or more trains to communicate
25 simultaneously with the level crossing. Without a gateway computer this would have to take place successively, and could lead to operational impediments.

30 A further advantage of the invention consists in the fact that immediate stop instructions which, when necessary, are sent by radio to the vehicles from the radio travel operations control center can also be transmitted immediately via the multiplex channel in regions with a high route element density. This applies
35 also to high-priority data which are sent by broadcast to all receive-end elements of the multiplex channel.

The invention will be explained in more detail below with reference to one exemplary embodiment which is illustrated at least partially in the figure.

Figure 1 shows a variant of a multiplex link from the vehicle into the control center and to the forwarding to route elements

Figure 1 illustrates the mechanism by means of an example of a route section composed of two railway switches W1, W2 and a level crossing LC. After the first link request has been implemented from the vehicle F to one of these three route elements (e.g. to the level crossing LC) via the gateway computer, each further link request from the vehicle F to another route element W1, W2 is multiplexed via the same physical link into the control center Z and forwarded from there to the desired route element W1 or W2 or LC.

The link setup to the route elements W1, W2 or LC can be optimized in this way. Thus, without multiplexing, the three communications would have to be carried out successively. With multiplexing it is possible for the communication phases of the individual communications to take place in a largely chronologically overlapping way.

Each communication is composed of the three following time elements:

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- b) setup of the securing layer, $T(\text{securing})$: approximately 15 sec
- c) data transmission, $T(\text{transmission})$: approximately 2 sec.

in which:

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moc: mobile originated call (from mobile into the ISDN
fixed network)

5 mtc: mobile terminated call (from the ISDN fixed
network to the mobile)

The entire communication duration is therefore:
without multiplexing:

$3(T(\text{GSM, mtm}) + T(\text{securing}) + T(\text{transmission})) =$
approximately 81 sec.

10 with multiplexing:

$T(\text{GSM to the gateway, moc}) + T(\text{GSM to the LC, mtc}) +$
 $T(\text{securing LC}) + T(\text{transmission to the LC}) =$
approximately 27 sec

15 For the radio travel operations application,
the multiplexing via gateway computer is completely
transparent; i.e. it is not visible which path is being
used to forward the link. The telegrams do not differ
at the interface to the secure application from
20 telegrams which are forwarded directly (without the
detour via the gateway computer) to a route element.

Patent claims

1. A communication system for radio travel operations for making radio transmissions of data which is transmitted in multiplex mode, using at least one gateway computer, characterized in that the radio links for the transmission of data between vehicles, route elements and a control center are not established directly but rather set up via the gateway computer.
2. The communication system for radio travel operations as claimed in claim 1, characterized in that the vehicles and the route elements are equipped with radio terminals, but the latter are alternatively also equipped with line-bound communications terminals.
3. The communication system for radio travel operations as claimed in claim 1, characterized in that the vehicles are trains and the route elements are railway switches, track locks, key locks, block or level crossings.
4. The communication system for radio travel operations as claimed in one of the preceding claims, characterized in that, if necessary, communication between a plurality of trains and a route element is provided.

Abstract

Communication system for radio travel operations

The invention describes a communication system for radio travel operations and can be applied in particular for railway services.

According to the invention, communication can take place simultaneously between the subsystems: vehicle, route elements, control center, in that the radio links for the transmission of data are not established directly but rather set up via a gateway computer.

FIG 1

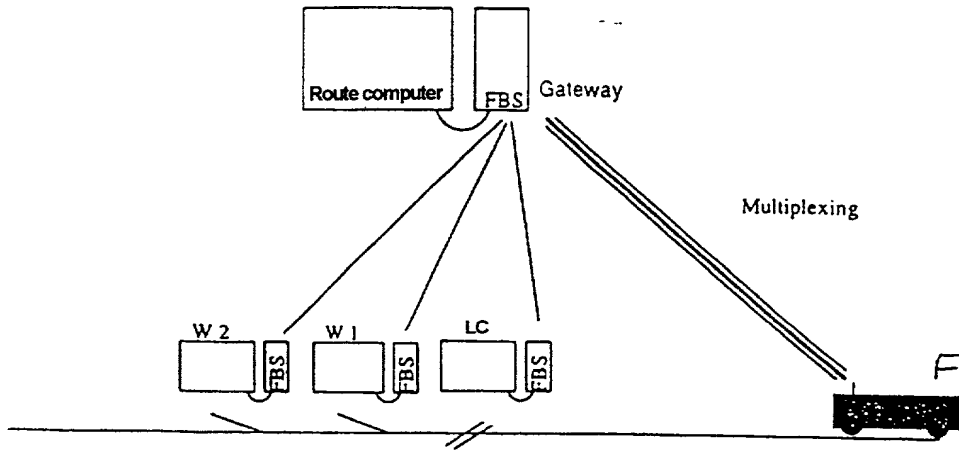


Fig. 1

Declaration and Power of Attorney For Patent Application

Erklärung Für Patentanmeldungen Mit Vollmacht

German Language Declaration

Als nachstehend benannter Erfinder erkläre ich hiermit an Eides Statt:

dass mein Wohnsitz, meine Postanschrift, und meine Staatsangehörigkeit den im Nachstehenden nach meinem Namen aufgeführten Angaben entsprechen,

dass ich, nach bestem Wissen der ursprüngliche, erste und alleinige Erfinder (falls nachstehend nur ein Name angegeben ist) oder ein ursprünglicher, erster und Miterfinder (falls nachstehend mehrere Namen aufgeführt sind) des Gegenstandes bin, für den dieser Antrag gestellt wird und für den ein Patent beantragt wird für die Erfindung mit dem Titel:

**Kommunikationssysteme fuer den
Fahrbetrieb**

deren Beschreibung

(zutreffendes ankreuzen)

☐ hier beigefügt ist.

☒ am 1999.09.30 als

PCT internationale Anmeldung

PCT Anwendungsnummer PCT/DE99/03239

eingereicht wurde und am

abgeändert wurde (falls tatsächlich abgeändert).

Ich bestätige hiermit, dass ich den Inhalt der obigen Patentanmeldung einschliesslich der Ansprüche durchgesehen und verstanden habe, die eventuell durch einen Zusatzantrag wie oben erwähnt abgeändert wurde.

Ich erkenne meine Pflicht zur Offenbarung irgendwelcher Informationen, die für die Prüfung der vorliegenden Anmeldung in Einklang mit Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) von Wichtigkeit sind, an.

Ich beanspruche hiermit ausländische Prioritätsvorteile gemäss Abschnitt 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 119 aller unten angegebenen Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde, und habe auch alle Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde nachstehend gekennzeichnet, die ein Anmeldedatum haben, das vor dem Anmeldedatum der Anmeldung liegt, für die Priorität beansprucht wird.

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

**Communication System for Radio-Travel
Operations**

the specification of which

(check one)

☐ is attached hereto.

☒ was filed on 1999.09.30 as

PCT international application

PCT Application No. PCT/DE99/03239

and was amended on (if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

German Language Declaration

Prior foreign applications

Priorität beansprucht

Priority Claimed

19847292.7

(Number)
(Nummer)

DE

(Country)
(Land)

1998.10.07

(Day Month Year Filed)
(Tag Monat Jahr eingereicht)

☒

Yes
Ja

☐

No
Nein

(Number)
(Nummer)

(Country)
(Land)

(Day Month Year Filed)
(Tag Monat Jahr eingereicht)

☐

Yes
Ja

☐

No
Nein

(Number)
(Nummer)

(Country)
(Land)

(Day Month Year Filed)
(Tag Monat Jahr eingereicht)

☐

Yes
Ja

☐

No
Nein

Ich beanspruche hiermit gemäss Absatz 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 120, den Vorzug aller unten aufgeführten Anmeldungen und falls der Gegenstand aus jedem Anspruch dieser Anmeldung nicht in einer früheren amerikanischen Patentanmeldung laut dem ersten Paragraphen des Absatzes 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 122 offenbart ist, erkenne ich gemäss Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) meine Pflicht zur Offenbarung von Informationen an, die zwischen dem Anmeldedatum der früheren Anmeldung und dem nationalen oder PCT internationalen Anmeldedatum dieser Anmeldung bekannt geworden sind.

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §122, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

PCT/DE99/03239

(Application Serial No.)
(Anmeldeseriennummer)

1999.09.30

(Filing Date D, M, Y)
(Anmeldedatum T, M, J)

(Status)

(patentiert, anhangig,
aufgegeben)

(Status)

(patented, pending,
abandoned)

(Application Serial No.)
(Anmeldeseriennummer)

(Filing Date D,M,Y)
(Anmeldedatum T, M; J)

(Status)

(patentiert, anhangig,
aufgeben)

(Status)

(patented, pending,
abandoned)

Ich erkläre hiermit, dass alle von mir in der vorliegenden Erklärung gemachten Angaben nach meinem besten Wissen und Gewissen der vollen Wahrheit entsprechen, und dass ich diese eidesstattliche Erklärung in Kenntnis dessen abgebe, dass wissentlich und vorsätzlich falsche Angaben gemäss Paragraph 1001, Absatz 18 der Zivilprozessordnung der Vereinigten Staaten von Amerika mit Geldstrafe belegt und/oder Gefängnis bestraft werden können, und dass derartig wissentlich und vorsätzlich falsche Angaben die Gültigkeit der vorliegenden Patentanmeldung oder eines darauf erteilten Patentes gefährden können.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

German Language Declaration

VERTRETUNGSVOLLMACHT: Als benannter Erfinder beauftrage ich hiermit den nachstehend benannten Patentanwalt (oder die nachstehend benannten Patentanwälte) und/oder Patent-Agenten mit der Verfolgung der vorliegenden Patentanmeldung sowie mit der Abwicklung aller damit verbundenen Geschäfte vor dem Patent- und Warenzeichenamt: (Name und Registrationsnummer anführen)

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (list name and registration number)

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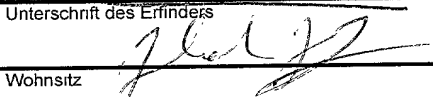
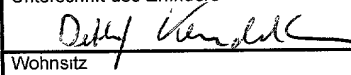
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Staatsangehörigkeit		Citizenship	
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